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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application N. 09/692,433	Applicant(s) TIFFT, WILLIAM WATSON
	Examiner GWEN LIANG	Art Unit 2172

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>04 February 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-9,12-20 and 41-50</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-9,12-20 and 41-50</u> is/are rejected.

7)☒ Claim(s) <u>3,5-8,14,16-19 and 41-44</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachm nt(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications: Amendment C, filed on 02/04/2004.

Specification

2.   The disclosure is objected to because of the following informalities:

"updates the updates" (page 5, line 8) is an improper use of English language.

Appropriate correction is required to be made to the aforementioned and any

other informalities existing in the disclosure.

Claim Objections

3.   Claims 42, 44, 45-50 are objected to because of the following informalities:

With regard to claim 42, the claim language "that are determined to be actual

matches", in line 3, does not clearly describe what are determined to be actual matches.

The Examiner proposes to amend the claim language to read ", wherein the possible

matches are determined to be actual matches".

Claim 44 is similarly rejected based on the reasons given for claim 42.

With regard to independent claim 45, the subject matter "each rule", in line 4,

should be changed to "each search rule" to clearly identify the antecedent.

With regard to independent claim 45, the commas "," before and after "for each

search rule" in line 5 should be deleted to enhance the readability of the claim language.

Independent claim 48 is similarly rejected based on the reasons given for claim

45.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 1-9, 41, 42, 12-20, 43, and 44 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

Independent claim 1 recites the limitation "the probability". There is insufficient

antecedent basis for this limitation in the claim.

Independent claim 12 is similarly rejected based on the reasons given for claim

1.

Response to Arguments

5.   Applicant's arguments regarding that the proposed combination of Neal in view of

Ozawa et al. does not disclose, teach, or suggest at least the feature of "calculating a

probability of each search rule locating the target record" as recited in amended claims l

and 12 have been considered but they are not persuasive. As reasons stated for claim

1 in this office action, Ozawa teaches in page 10 section [0014] line 13 – page 11 line 4,

that the average value of all the data evaluation values is calculated, and by using this

as the retrieval efficiency evaluation value for the information retrieval technique, the

retrieval efficiency is represented using one index. By sequencing the valuation values

calculated for at least one or more information retrieval techniques, the merits of each

type of information retrieval technique are determined, wherein the retrieval efficiency

evaluation is analogous to a probability for each search rule locating the target record.

In another word, a rule of higher efficiency is a rule of higher probability to locate a

target record. As stated in the applicant's specification, page 4, lines 15-18, "The rules

analyzer collects statistics on the performance of each search rule and assigns a priority

value for each search rule according to the collected statistics. The priority values are

based on the efficiency or precision of each search rule.", wherein the **statistics on th**

performance of each search rule are collected. As stated above, Ozawa teaches

retrieval efficiency evaluation value for each retrieval technique (equivalent to

"performance of each search rule"), which closely matches the summary of the

invention disclosed in the applicant's specification. The examiners assumes "a retrieval

efficiency evaluation value" taught in Ozawa is analogous to "a probability for... locating

the target record" as claimed in the applicant's invention; otherwise the applicant's

specification fails to define "a probability..." to be clearly distinguishable from "a retrieval

efficiency evaluation value".

Allowable Subject Matter

6.   Claims 3, 5, 6, 7, 8, 14, 16, 17, 18, 19, 41, 43 are objected to as being dependent

upon a rejected base claim, but would be allowable if rewritten in independent form to

overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this

Office action, and to include all of the limitations of the base claim and any intervening

claims.

The following is a statement of reasons for the indication of allowable subject

matter:

As to dependent claim 3, the prior art of record does not anticipate nor suggest a method wherein one of the collected counts corresponds to a number of instances that a search rule retrieves one or more records as possible matches to the target record, in the specific combination as recited in claim 1.

As to dependent claim 5, the prior art of record does not anticipate nor suggest a method wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule, in the specific combination as recited in claim 1.

As to dependent claim 6, the prior art of record does not anticipate nor suggest a method wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule, in the specific combination as recited in claim 1.

As to dependent claim 7, the prior art of record does not anticipate nor suggest a method wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a plurality of records, wherein the plurality of records are subsequently determined to correspond to the target record, in the specific combination as recited in claim 1.

As to dependent claim 8, the prior art of record does not anticipate nor suggest a method wherein one of the collected counts corresponds to the number of records of the plurality of retrieved records determined not to be the target record, in the specific combination as recited in claim 1.

As to dependent claim 14, the prior art of record does not anticipate nor suggest a system wherein one of the collected counts corresponds to a number of instances that a search rule retrieves one or more records as possible matches to the target record, in the specific combination as recited in claim 12.

As to dependent claim 16, the prior art of record does not anticipate nor suggest a system wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule, in the specific combination as recited in claim 12.

As to dependent claim 17, the prior art of record does not anticipate nor suggest a system wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule, in the specific combination as recited in claim 12.

As to dependent claim 18, the prior art of record does not anticipate nor suggest a system wherein one of the collected counts corresponds to a number of instances that a search rule retrieves a plurality of records, wherein the plurality of records are subsequently determined to correspond to the target record, in the specific combination as recited in claim 12.

As to dependent claim 19, the prior art of record does not anticipate nor suggest a system wherein one of the collected counts corresponds to the number of records of the plurality of retrieved records determined not to be the target record, in the specific combination as recited in claim 12.

As to dependent claim 41, the prior art of record does not anticipate nor suggest a method where calculating a probability further comprises calculating a percentage of rule firings in which a corresponding search rule finds a possible match, in the specific combination as recited in claim 1.

As to dependent claim 43, the prior art of record does not anticipate nor suggest a program where calculating a probability further comprises calculating a percentage of rule firings in which a corresponding search rule finds a possible match, in the specific combination as recited in claim 12.

7.   Claims 42, 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to overcome the objection(s) and the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to dependent claim 42, the prior art of record does not anticipate nor suggest a method where calculating a probability further comprises calculating a percentage of possible matches found by a rule that are determined to be actual matches, in the specific combination as recited in claim 1.

As to dependent claim 44, the prior art of record does not anticipate nor suggest a program where calculating a probability further comprises calculating a percentage of possible matches found by a rule that are determined to be actual matches, in the specific combination as recited in claim 12.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 1, 9, 12, 20, 45-50 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Neal et al., "Neal" (U.S. Patent No. 6,324,534), further in view of

Ozawa et al., "Ozawa" (JP. Patent No. 7-271798).

With respect to claim 1, Neal teaches a method comprising the steps of:

implementing a plurality of search rules that include one or more data elements,

wherein a combination of data elements in each rule is configured to identify a target

record (See for example: Abstract, "The system accepts search terms from a user, and

then executes a sequence of search strategies on subsets of the database which may

include a proximity search, a word count search, and a fuzzy logic search."; col. 3 line

63 – col. 4 line 2, "According to the present invention, a method of selecting data

records in a catalog database comprises the following steps: inputting search terms to a

user interface; testing the search terms against a sequence of data sets using search

algorithms designated for each data set; and terminating the sequence of search

algorithms when at least one database record satisfied the search criteria."); and

retrieving a plurality of records identified by the search rules as possible matches to the target record (See for example: Abstract, "The user can page through the list of displayed matches");

However Neal does not explicitly disclose a method comprising: collecting a plurality of counts ...; calculating a probability for each search rule..., arranging the search rules in an order ..., and executing the search rules according to the order ...

Ozawa discloses a method comprising:

collecting a plurality of counts related to the probability of each search rule locating the target record (See for example: pages 7-8 section [0008], "With this invention, ... an information retrieval technique evaluation method is proposed that is an evaluation method for the retrieval efficiency of an information retrieval technique used on an information retrieval system that acquires retrieved data that match data to be retrieved given in advance from a database, that calculates the retrieval efficiency of respective retrieval techniques from an external evaluation value that indicates whether the data in the database match the data to be retrieved determined by at least one or more persons, and a value as to whether or not the data in the database match the data to be retrieved determined by the information retrieval technique, and that determines the merits of the retrieval technique, ... The aforementioned one datum evaluation value is created for the combination of all the given data to be retrieved and the data in the database and the average value of all the one datum evaluation values is calculated".); and

calculating a probability for each search rule locating the target record (See for

example: page 7 section [0008] "an information retrieval technique evaluation method is

proposed that is an evaluation method for the retrieval efficiency of an information

retrieval technique used on an information retrieval system that acquires retrieved data

that match data to be retrieved given in advance from a database, that **calculates the**

retrieval efficiency of respective retrieval techniques"; page 10 section [0014] line 13 –

page 11 line 4, "In addition, the average value of all the data evaluation values is

calculated, and by using this as the retrieval efficiency evaluation value for the

information retrieval technique, the retrieval efficiency is represented using one index.

By sequencing the valuation values calculated for at least one or more information

retrieval techniques, the merits of each type of information retrieval technique are

determined.", wherein the retrieval efficiency evaluation is analogous to a probability for

each search rule locating the target record. In another word, a rule of higher efficiency

is a rule of higher probability to locate a target record.); and

arranging the search rules in an order based on the probability for each search

rule (See for example: page 15 section [0028], "Sorting module (8) **rearranges** the

retrieval techniques in evaluation value buffer (7) in order of the smaller evaluation

values."); and

executing the search rules according to the order to retrieve the target record

(See for example: page 5 section [0001], "This invention relates to an information

retrieval technique evaluation method and device for same for automatically selecting

the optimal information retrieval technique when multiple information retrieval

techniques are available. In particular, it relates to an evaluation method and device for

a database retrieval technique where the relationship between retrieval conditions and

data that should be retrieved changes often according to [the needs of the] user, as

represented by a current events information database, such as for newspaper articles.";

page 9 of section [0011], "...**a sorting means** that places the average values obtained

for each retrieval technique **in a prescribed order**"; page 18 section [0038] lines 6-8,

"By outputting the retrieval technique numbers **arranged in order** of smaller evaluation

value as step 20, **they can be selected in order** from the retrieval techniques closer to

human judgment.");.

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to incorporate a method of arranging the search rules in an order

based on the probability for each search rule as disclosed by Ozawa into the method of

implementing a plurality of search rules as taught by Neal for automatically selecting the

optimal information retrieval technique when multiple information retrieval techniques

are available (See for example: page 5 section [0001] lines 3-5) One of ordinary skill in

the art would be motivated to make the aforementioned combination with reasonable

expectation of success.

Claim 9 is rejected for the reasons set forth hereinabove for claim 1 and

furthermore Ozawa teaches a method wherein the order is descending order by the

probability (See for example: page 13 lines 20-22; page 15 section [0028]).

Claims 12, 20 are rejected on grounds corresponding to the reasons given above

for claims 1, 9.

With respect to claim 45, Neal teaches a method comprising the steps of:

implementing a plurality of search rules that include one or more data elements,

wherein a combination of data elements in each rule is configured to identify a target

record (See for example: Abstract, "The system accepts search terms from a user, and

then executes a sequence of search strategies on subsets of the database which may

include a proximity search, a word count search, and a fuzzy logic search."; col. 3 line

63 – col. 4 line 2, "According to the present invention, a method of selecting data

records in a catalog database comprises the following steps: inputting search terms to a

user interface; testing the search terms against a sequence of data sets using search

algorithms designated for each data set; and terminating the sequence of search

algorithms when at least one database record satisfied the search criteria."); and

However Neal does not explicitly disclose a method comprising: calculating a

probability for each search rule..., and arranging the search rules in an order.

Ozawa discloses a method comprising:

calculating a probability, for each search rule, that the search rule will locate the

target record (See for example: page 7 section [0008] "an information retrieval

technique evaluation method is proposed that is an evaluation method for the retrieval

efficiency of an information retrieval technique used on an information retrieval system

that acquires retrieved data that match data to be retrieved given in advance from a

database, that **calculates the retrieval efficiency** of respective retrieval techniques";

page 10 section [0014] line 13 – page 11 line 4, "In addition, the average value of all the

data evaluation values is calculated, and by using this as the retrieval efficiency

evaluation value for the information retrieval technique, the retrieval efficiency is represented using one index. By sequencing the valuation values calculated for at least one or more information retrieval techniques, the merits of each type of information retrieval technique are determined.", wherein the retrieval efficiency evaluation is analogous to a probability for each search rule locating the target record. In another word, a rule of higher efficiency is a rule of higher probability to locate a target record.); and

arranging the search rules in an order based on the probability for each search rule (See for example: page 15 section [0028], "Sorting module (8) **rearranges** the retrieval techniques in evaluation value buffer (7) in order of the smaller evaluation values.").

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a method of arranging the search rules in an order based on the probability for each search rule as disclosed by Ozawa into the method of implementing a plurality of search rules as taught by Neal for automatically selecting the optimal information retrieval technique when multiple information retrieval techniques are available (See for example: page 5 section [0001] lines 3-5) One of ordinary skill in the art would be motivated to make the aforementioned combination with reasonable expectation of success.

Claim 46 is rejected for the reasons set forth hereinabove for claim 45 and furthermore Ozawa teaches a method comprising executing the search rules according

to the order to retrieve the target record (See for example: page 5 section [0001]; page 18 section [0038] lines 6-8).

Claim 47 is rejected for the reasons set forth hereinabove for claim 45 and furthermore Ozawa teaches a method, where the step of calculating comprises:

retrieving a plurality of records identified by the search rules as possible matches to the target record (See for example: Abstract, "The user can page through the list of displayed matches"); and

collecting a plurality of counts, each count related to the probability of a search rule locating the target record (See for example: pages 7-8 section [0008]).

Claims 48-50 are rejected on grounds corresponding to the reasons given above for claims 45-47.

9.   Claims 2, 4, 13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neal et al., "Neal" (U.S. Patent No. 6,324,534), further in view of Ozawa et al., "Ozawa" (JP. Patent No. 7-271798), and further in view of Natarajan et al., "Natarajan" (U.S. Patent No. 4,752,890).

Claim 2 is rejected for the reasons set forth hereinabove for claim 1. However the combination of Neal and Ozawa does not explicitly disclose a method wherein one of the collected counts corresponds to number of instances that a search rule is executed to search for the target record.

Natarajan teaches a method wherein one of the collected counts corresponds to number of instances that a search rule is executed to search for the target record (See for example: col. 6 lines 8-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to collect the number of instances that a search rule is executed as disclosed by Natarajan as one of the collected counts of a search rule executed to search for the target record as taught by the combination of Neal and Ozawa. The information it gathers from repeated observations of the execution of the search program is used to produce automatically a near-optimal ordering of the alternatives. (See for example: col. 4 lines 62-66). One of ordinary skill in the art would be motivated to make the aforementioned combination with reasonable expectation of success.

Claim 4 is rejected for the reasons set forth hereinabove for claim 1. However the combination of Neal and Ozawa does not explicitly disclose a method wherein one of the collected counts corresponds to an elapsed time value equivalent to an amount of time spent executing a search rule to retrieve a record.

Natarajan teaches a method wherein one of the collected counts corresponds to an elapsed time value equivalent to an amount of time spent executing a search rule to retrieve a record (See for example: col. 18 line 64 – col. 19 line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to collect an elapsed time value as disclosed by Natarajan as one of the collected counts of a search rule executed to search for the target record as taught by the combination of Neal and Ozawa in order to develop a history of the monitored quantifiable performance parameters (See for example: col. 18 lines 64-65). One of ordinary skill in the art would be motivated to make the aforementioned combination with reasonable expectation of success.

Claims 13, 15 are rejected on grounds corresponding to the reasons given above for claims 2, 4.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"Discrete Search With Directional Information": A strategy to minimizes the expected number of looks to find an object.

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWEN LIANG whose telephone number is 703-305-3985. The examiner can normally be reached on 9:00 A.M. - 5:30 P.M. Monday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

G.L.
15 March 2004

JEAN M. CORRIELUS
PRIMARY EXAMINER